

ABSTRACT OF THE INVENTION

A system and method of synchronizing at least one variable such as a counter among a network of distributed computers where the computers communicate via asynchronous message passing. The distributed computers are organized as nodes in a tree. Each computer in the tree is capable of functioning as a parent, child, or both. For each variable to be synchronized, each parent receives a contribution from a child which includes contributions from any children of the child and returns other contributing values to the child. The child then updates the local value of the variable with the returned contributing values. The returned contributing values include contributions to the variable from all computers in the tree other than the child and other than any children subordinate to the child in the tree. Each computer can have multiple children.